

AD-A023 165

SPECIAL DATA COLLECTION SYSTEM (SDCS) EVENT
REPORT, CENTRAL MID-ATLANTIC RIDGE, 7 OCTOBER 1975

K. J. Hill, et al

Teledyne Geotech

Prepared for:

Defense Advanced Research Projects Agency

6 January 1976

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SDCS-ER-75-49

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ADA023165

SPECIAL DATA COLLECTION SYSTEM EVENT REPORT
Central Mid-Atlantic Ridge, 7 October 1975

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January 1976

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The Defense Advanced Research Projects Agency
Nuclear Monitoring Research Office
1400 Wilson Boulevard, Arlington, Virginia 22209
ARPA Order No. 2897

Monitored By
VELA Seismological Center
312 Montgomery Street, Alexandria, Virginia 22314

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

| REPORT DOCUMENTATION PAGE | | READ INSTRUCTIONS BEFORE COMPLETING FORM |
|--|----------------------|--|
| 1 REPORT NUMBER SDCS-ER-75-49 | 2 GOVT ACCESSION NO. | 3 RECIPIENT'S CATALOG NUMBER |
| 4 TITLE (and Subtitle) SPECIAL DATA COLLECTION SYSTEM (SDCS) Central Mid-Atlantic Ridge, 7 October 1975 | | 5 TYPE OF REPORT & PERIOD COVERED Technical |
| | | 6 PERFORMING ORG. REPORT NUMBER |
| 7 AUTHOR(s) Hill, K. J., Dawkins, M. S., and Baumstark, R. R. | | 8 CONTRACT OR GRANT NUMBER(s) F08606-74-C-0013 |
| 9 PERFORMING ORGANIZATION NAME AND ADDRESS Teledyne Geotech 314 Montgomery Street Alexandria, Virginia 22314 | | 10 PROGRAM ELEMENT PROJECT, TASK AREA & WORK UNIT NUMBERS T/4703 |
| 11 CONTROLLING OFFICE NAME AND ADDRESS Defense Advanced Research Projects Agency Nuclear Monitoring Research Office 1400 Wilson Blvd.-Arlington, Virginia 22314 | | 12 REPORT DATE 6 January 1976 |
| | | 13 NUMBER OF PAGES 19 |
| 14 MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) VELA Seismological Center 312 Montgomery Street Alexandria, Virginia 22341 | | 15 SECURITY CLASS. (of this report) Unclassified |
| | | 15a DECLASSIFICATION DOWNGRADING SCHEDULE |
| 16 DISTRIBUTION STATEMENT (of this Report) APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED. | | |
| 17 DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report) | | |
| 18 SUPPLEMENTARY NOTES | | |
| 19 KEY WORDS (Continue on reverse side if necessary and identify by block number) | | |
| 20 ABSTRACT (Continue on reverse side if necessary and identify by block number) | | |

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

SDCS EVENT REPORT NO. 49

Central Mid-Atlantic Ridge, 7 October 1975

This event report contains seismic data from the Special Data Collection System (SDCS), and other sources for the above event. Published epicenter information from seismic observations is:

| | "P" Arrival | Origin Time | Lat. | Long. | m_b | M_s |
|---------|-------------|-------------|------|-------|-------|-------|
| NORSAR | 08:38:56.6 | 08:28:18 | 01 N | 025 W | 5.8 | N/A |
| Hagfors | 08:38:58.7 | 08:28:06 | 02 S | 020 W | 6.3 | 5.6 |

Using SDCS stations, LASA and NORSAR, the epicenter location and magnitudes become

08:28:08.5 01.2N 026.8W 5.8 5.8

All SDCS stations were operational during this period.

Short-period signals associated with this event were recorded at all SDCS stations, LASA and NORSAR. Horizontal SP channels at all SDCS stations were rotated.

Long-period signals were recorded at all SDCS stations, ALPA, LASA, and NORSAR. Horizontal LP channels at RK-ON were rotated. At WH2YK, CPSO and FN-WV horizontal LP channels were not rotated due to signal clipping. Rotation of the horizontal LP channels at HN-ME could not be accomplished because of unknown operating gains of all the LP channels and signal clipping. The arrival of the LQ phase at RK-ON appears on the LP radial channel; no explanation can be made for this occurrence and validity is therefore questionable. LASA long-period array data recovery is limited by the number of data points on the source tape. Validity of the ALPA and NORSAR long-period vertical beams is uncertain and horizontal beams were not included because of program recovery problems.

Scaling factors on plots are millimicrons at 1 Hz (not corrected for instrument response) with the exception of LASA and NORSAR short-period plots. LASA SP scaling factors are millimicrons per inch. Scaling factors are not reported for NORSAR short-period.

STATION DESCRIPTION

| SITE CODE | LOCATION | SITE COORDINATES DEG MN SECS | ELEVATION METERS | INSTRUMENTATION | |
|--------------|----------------------------|---------------------------------|---------------------|------------------|--------------------|
| | | | | SHORT-PERIOD | LONG-PERIOD |
| ALPA | Alaska | 65 14 00.0 N 147 44 36.0 W | 626 | None | 31300 |
| CPSO | McMinnville, Tennessee | 35 35 41.4 N 085 34 13.5 W | 574 | 6480 V 7515 H | SL210 V SL220 H |
| FN-WV | Franklin, West Virginia | 38 32 58.0 N 079 30 47.0 W | 910 | KS36000 | KS36000 |
| LASA | Billings, Montana | 46 41 19.0 N 106 13 20.0 W | 744 | HS10 | 7505A V 8700C H |
| HN-ME | Houlton, Maine | 46 09 43.0 N 067 59 09.0 W | 213 | 18300 | SL210 V SL220 H |
| NORSAR | Kjeller, Norway | 60 49 25.4 N 010 49 56.5 E | 379 | HS10 | 7505A V 8700C H |
| RK-ON | Red Lake, Ontario | 50 50 20.0 N 093 40 20.0 W | 366 | 18300 | SL210 V SL220 H |
| WH2YK | White Horse, Yukon | 60 41 41.0 N 134 58 02.0 W | 855 | 18300 | SL210 V SL220 H |

Note: The orientation of the radial instruments at FN-WV is assumed to be 316° + 5° based on empirical data (event recordings). Rotation, where performed, is referenced to this azimuth and may be questionable.

HYPOCENTER DETERMINATION

INPUT FOR EVENT 7 OCT 75
08:28:18.0 2.000N 26.000W 0KM.

| STA. | ARRIVAL | RESIDUALS | | DIST. | AZ. |
|-------|------------|-----------|------|-------|-------|
| | | CAIC | REST | | |
| HN-ME | 08 37 57.4 | -0.0 | -0.7 | 57.4 | 327.1 |
| PN-WV | 08 38 22.6 | 0.7 | 1.1 | 60.8 | 314.4 |
| CFC | 08 38 45.1 | -0.4 | 0.6 | 64.2 | 309.3 |
| NAO | 08 38 56.6 | -0.0 | 0.5 | 66.0 | 19.1 |
| FR-CN | 08 39 47.8 | -0.5 | -1.0 | 74.6 | 322.8 |
| LAC | 08 40 29.1 | -0.0 | -0.0 | 81.8 | 316.9 |
| WH2YK | 08 41 44.5 | 0.3 | -0.4 | 97.7 | 331.8 |

67 HERRIN TRAVEL TIME TABLES

| ORIGIN | LAT. | LCNG. | DEPTH (KM) | SDV | IT | STA |
|------------|--------|---------|------------|-----|----|-----|
| 08:28:57.8 | 3.032N | 27.302W | 363. CAIC | 0.4 | 8 | 7 |
| 08:28:08.5 | 1.220N | 26.850W | 0. REST | 0.8 | 3 | 7 |

| CAIC | | | | REST | | | |
|-------|------|---|---|-------|------|---|---|
| 1 . 1 | | | | 1 . 1 | | | |
| 5 | . | 0 | | 5 | . | 0 | |
| 0 | 0. 0 | 0 | | 0 | 0. 0 | 0 | |
| 0 | . | . | . | 0 | . | . | . |
| 0 | 0. 0 | 0 | 0 | 0 | 0. 0 | 0 | 0 |
| 0 | . | 0 | | 0 | . | 0 | |
| 0 . 0 | | | | 0 . 0 | | | |

CHI2 COVERAGE ELLIPSE; 95 PER CENT CONF..LEVEL, SDV= 0.95
MAJOR 141.3KM. MINOR 42.1KM. AZ= 168 AREA= 18703 SQ.KM. REST

DATA SUMMARY

INPUT FOR EVENT 7 OCT 75
 08:28:18.0 2.000N 26.000W 0KM.

| STA. | PHASE | ARRIVAL | | | INST | PER | A/T | MAGNITUDE | | DIP | DIST |
|-------|-------|---------|------|--|------|------|-------|-----------|------|-----|-------|
| | | TIME | | | | | | MB | MS | | |
| HN-ME | EP | 08 37 | 57.4 | | SPZ | 5.5 | 51. | 5.21 | | | 57.4 |
| HN-ME | LQ | 08 52 | 23.0 | | LFT | 33.0 | ?? | | | | |
| HN-ME | LR | 08 56 | 48.0 | | LPZ | 23.0 | 9999. | | 0.0 | | 57.4 |
| FN-WV | EP | 08 38 | 22.6 | | SPZ | 1.2 | 140. | 5.72 | | | 60.8 |
| CPC | EP | 08 38 | 45.1 | | SPZ | 1.3 | 281. | 6.15 | | | 64.2 |
| NAC | EP | 08 38 | 56.6 | | AB | 1.3 | 342. | 6.24 | | | 66.0 |
| PK-CN | EP | 08 39 | 47.8 | | SPZ | 1.1 | 97. | 5.49 | | | 74.6 |
| PK-CN | LQ | 09 00 | 56.0 | | LPR | 33.0 | 1543. | | | | |
| PK-CN | LR | 09 06 | 30.0 | | LPZ | 23.0 | 9999. | | 0.0 | | 74.6 |
| IAC | EP | 08 40 | 29.1 | | AB | 0.7 | 550. | 6.32 | | | 81.8 |
| WBZYK | EP | 08 41 | 44.5 | | SPZ | 1.5 | 10. | 5.17 | | | 97.7 |
| ALFA | LB | 09 23 | 03.0 | | LPZ | 22.0 | 517. | | 5.84 | | 101.4 |

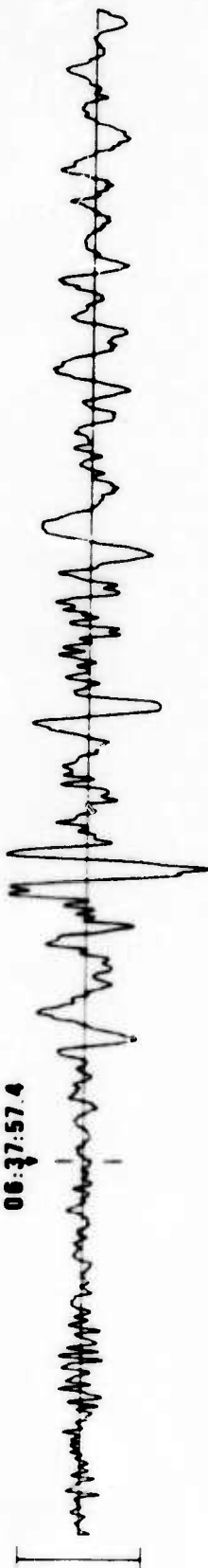
| CRIGIN | IAT. | ICNG. | DEPTH (KM) | MAG | SDV | STA | LPNAG | LPSEV | IPSTA |
|------------|--------|---------|------------|------|------|-----|-----------|-------|-------|
| 08:28:57.8 | 3.032N | 27.302W | 363. CAIC | 5.10 | 0.46 | 6 | 5.83***** | | 1 |
| 08:28:08.5 | 1.220N | 26.850W | 0. REST | 5.76 | 0.49 | 7 | 5.84***** | | 1 |

IAC NOT USED IN CALC RUN SE AVG. MAG.

HN-ME 07 OCT 75

SPZ
236.15 MHz

08:37:57.4



SPR
165.43 MHz



SPT
65.15 MHz



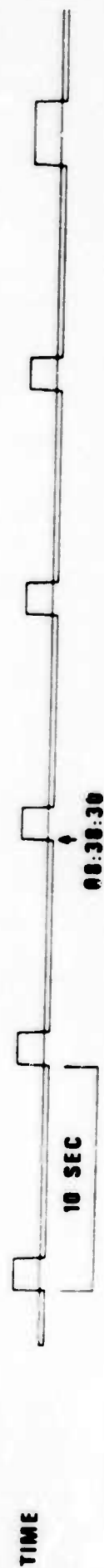
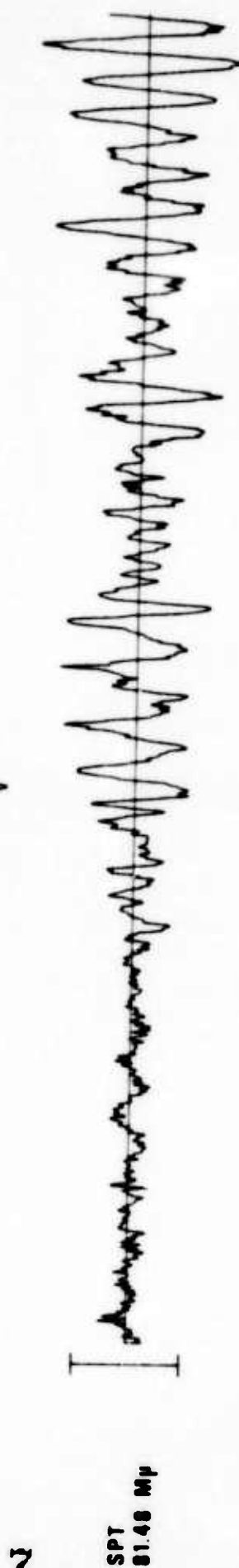
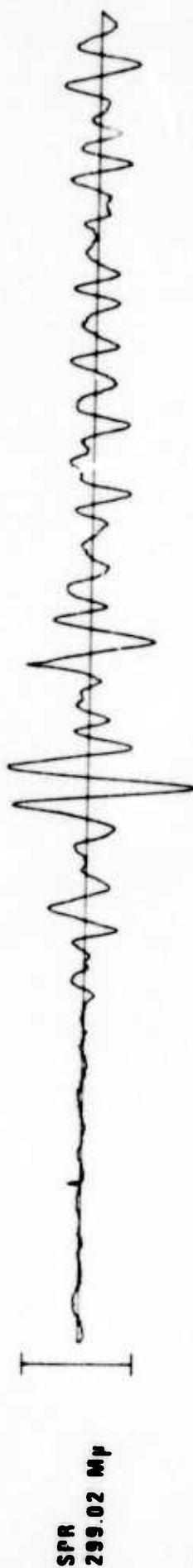
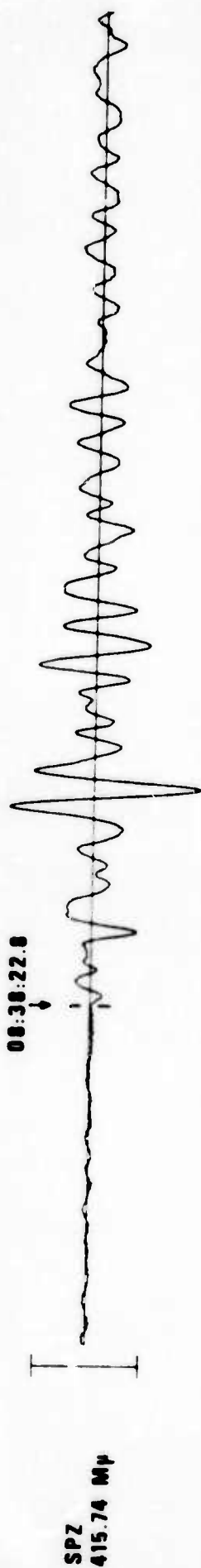
TIME

10 SEC

08:36:10



FN-WV 07 OCT 75



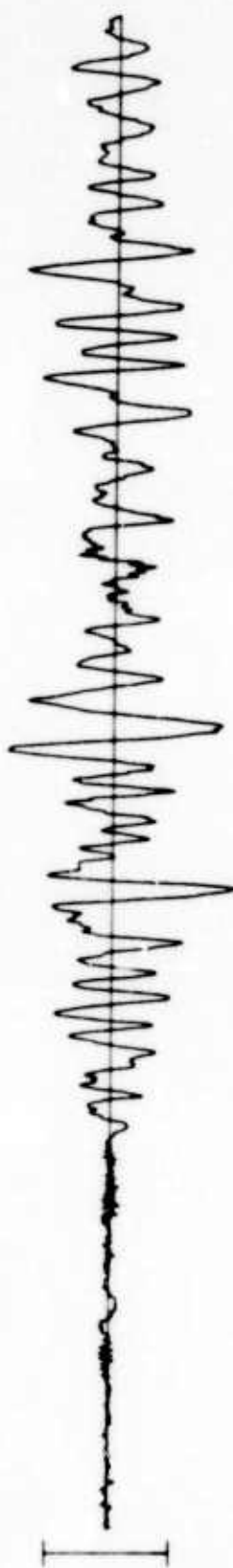
CPSO 07 OCT 75

00:38:45.1

SPZ
505.24 MP



SPR
109.50 MP

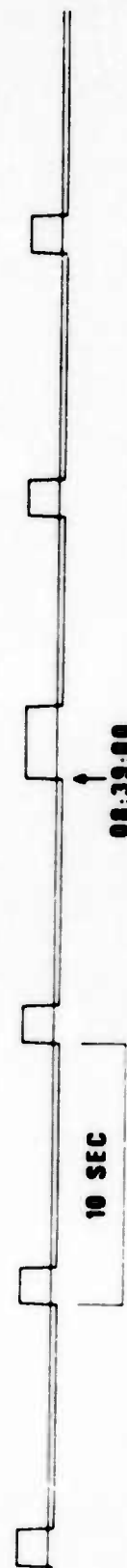


∞

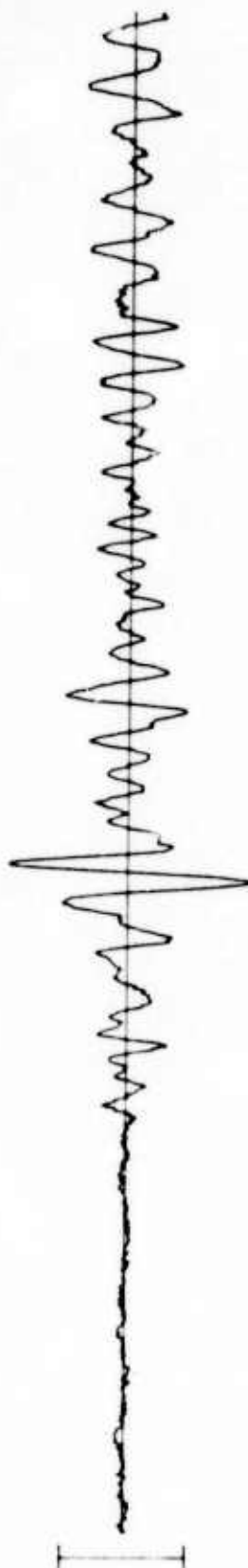
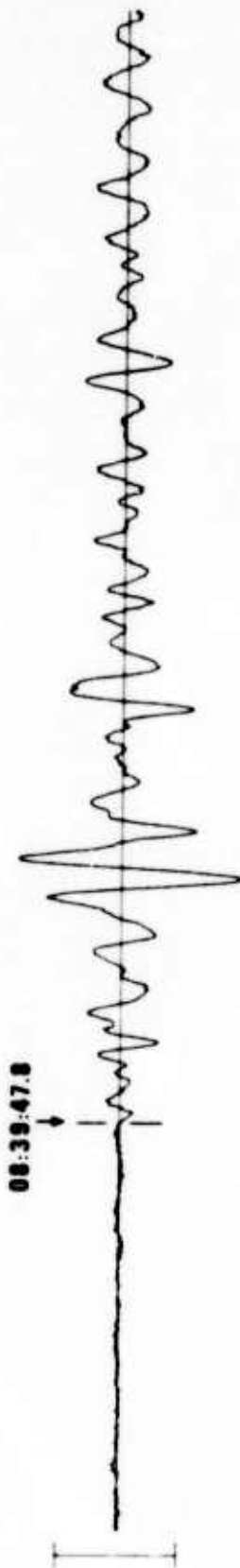
SPT
00.00 MP



TIME



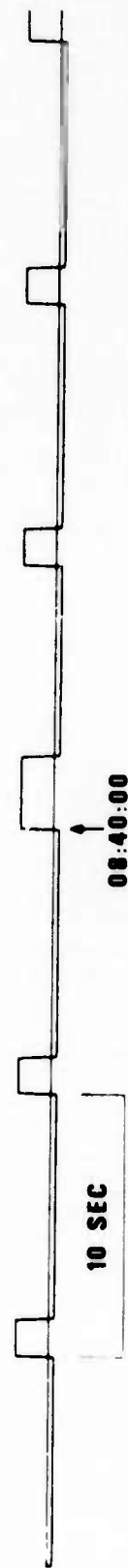
RK-ON 07 OCT 75



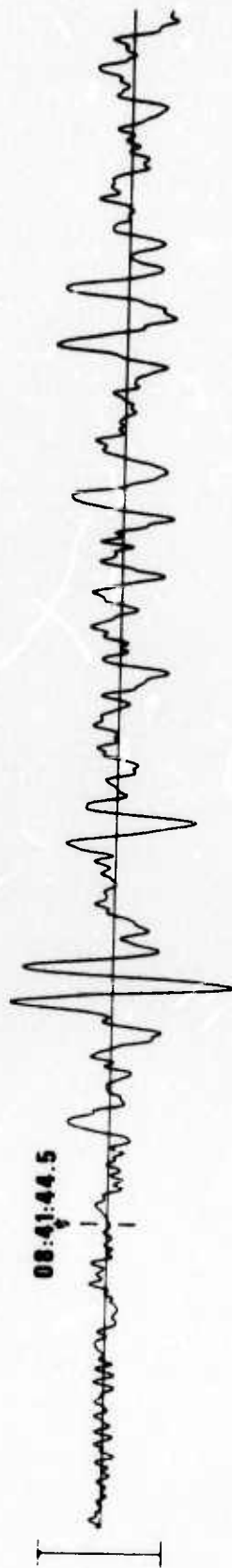
Q



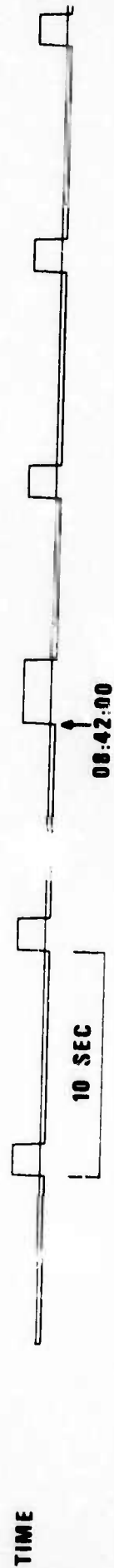
TIME



WH2YK 07 OCT 75



10



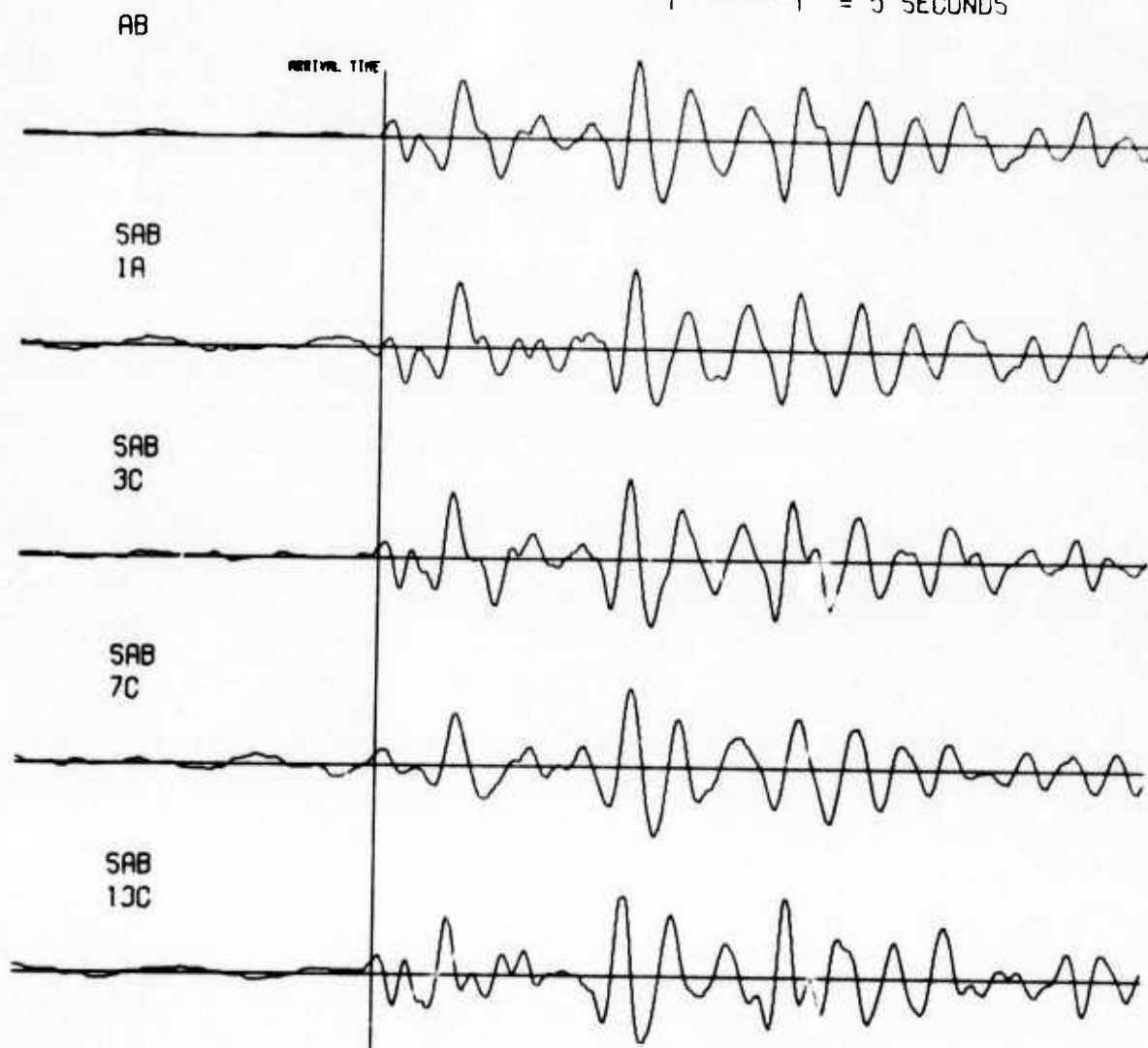
NORSAR EVENT FILE

1975 OCT 7

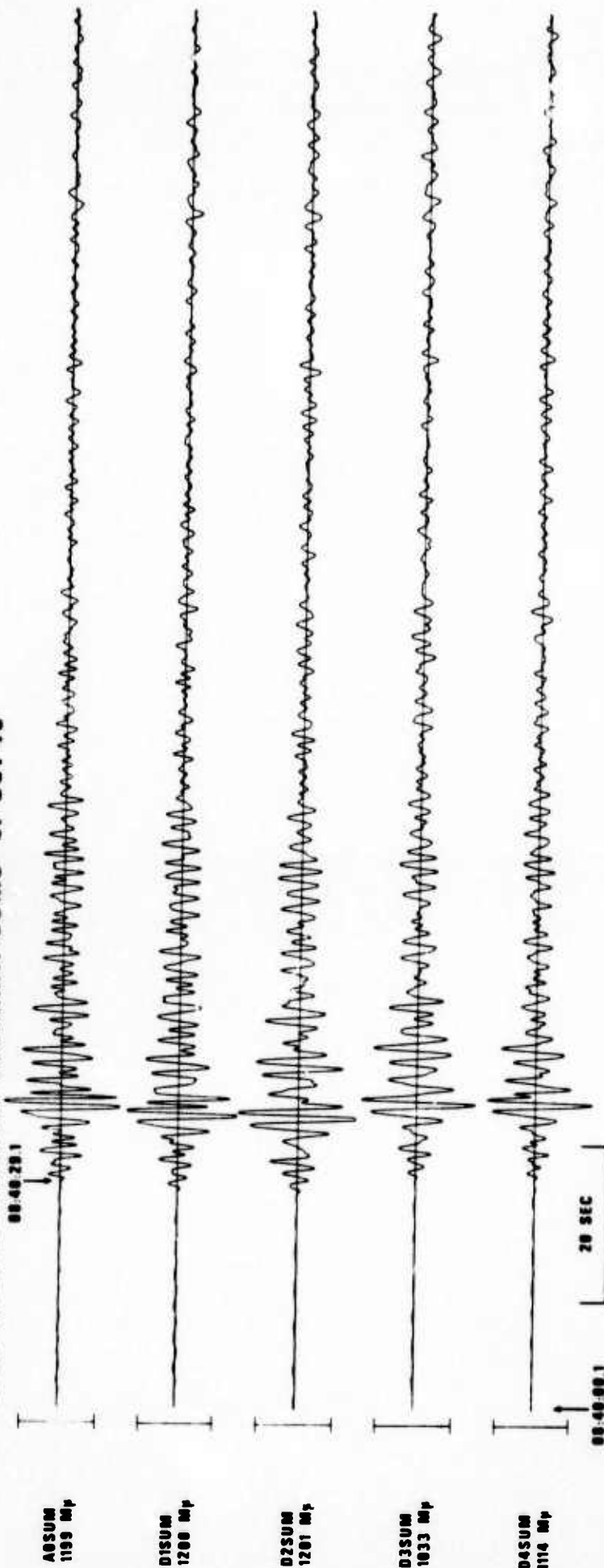
EPX NO. 85750 ARR. 8.38.56.8 1.3N 25.2W 5.4MB 33KM

DIST = 65.4 AZI = 220.2 AMP = 66.5 PER = 1.4

|———| = 5 SECONDS

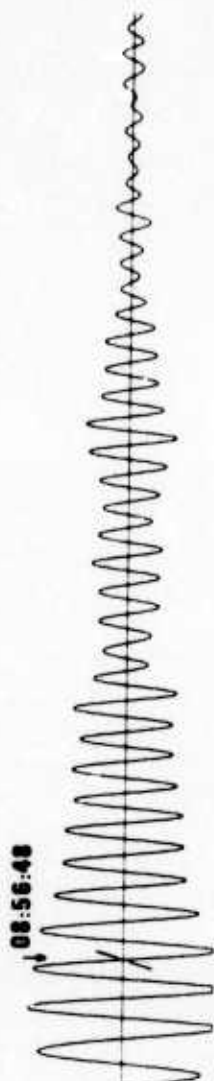


LASA INFINITE VELOCITY SUBARRAY SUMS 07 OCT 75



HN-ME 07 OCT 75

LPZ
UNKNOWN



13
LPR
UNKNOWN



LPT
UNKNOWN

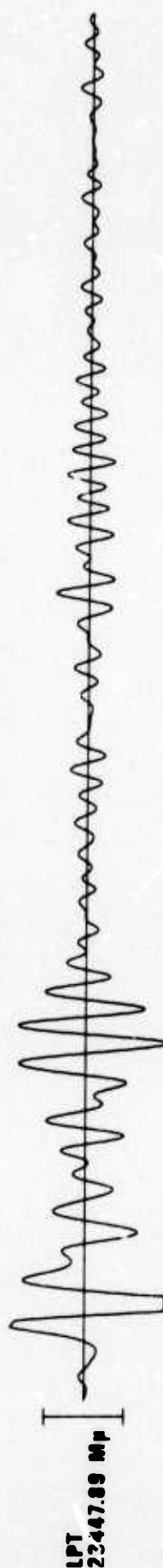
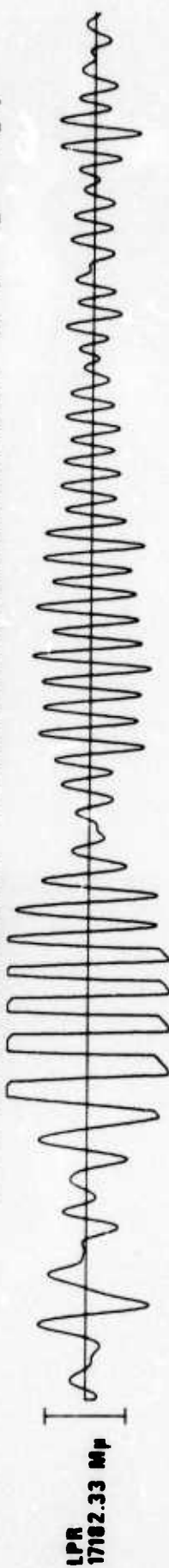


TIME



INVALID CALIBRATIONS

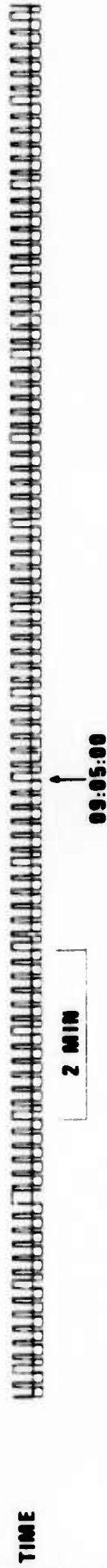
FN-WV 07 OCT 75



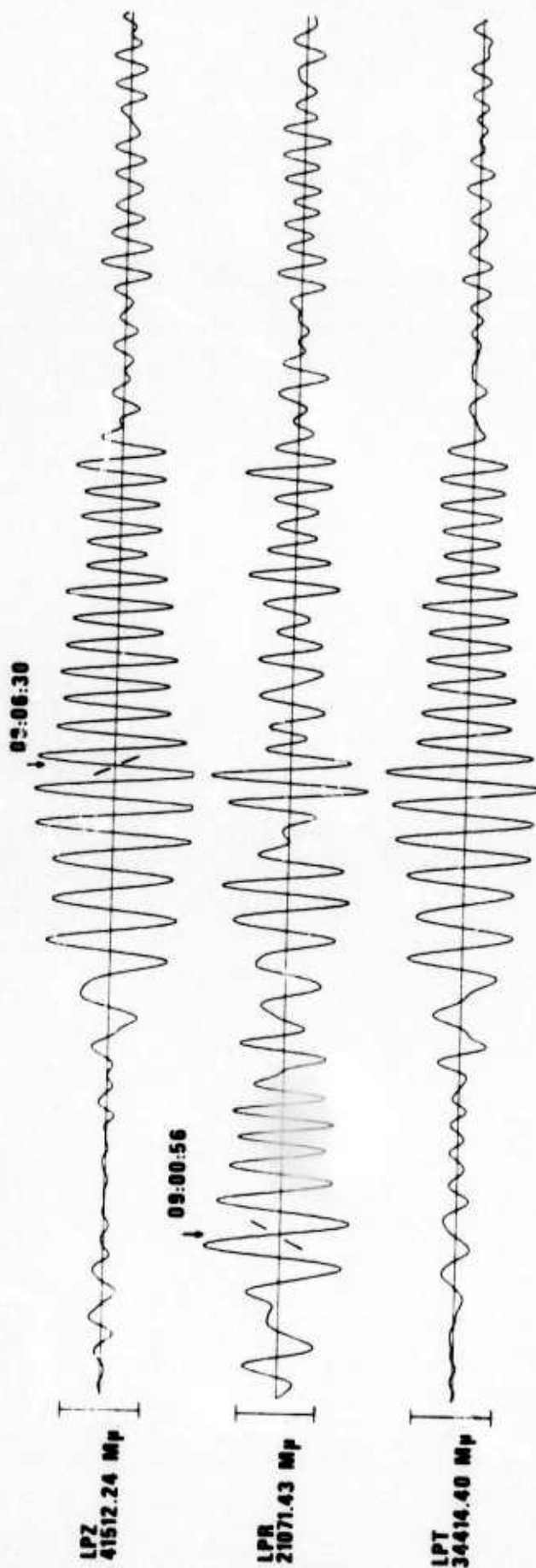
14



CPSO 07 OCT 75



RK-ON 07 OCT 75

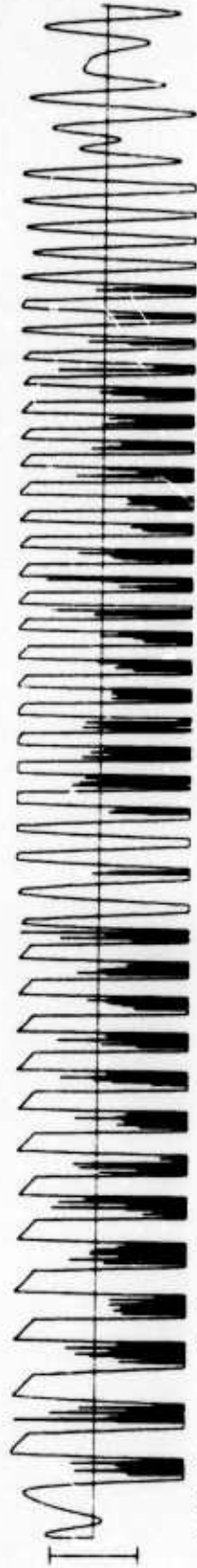


16

TIME



WH2YK 07 OCT 75

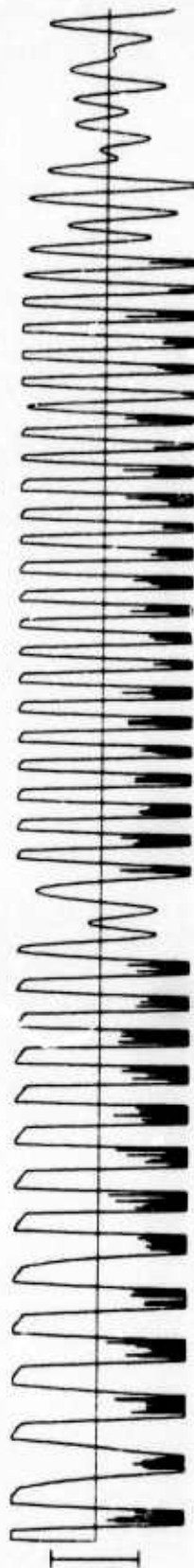


LPZ
5188.16 My



LPR
14281.92 My

17



LPT
30408.00 My

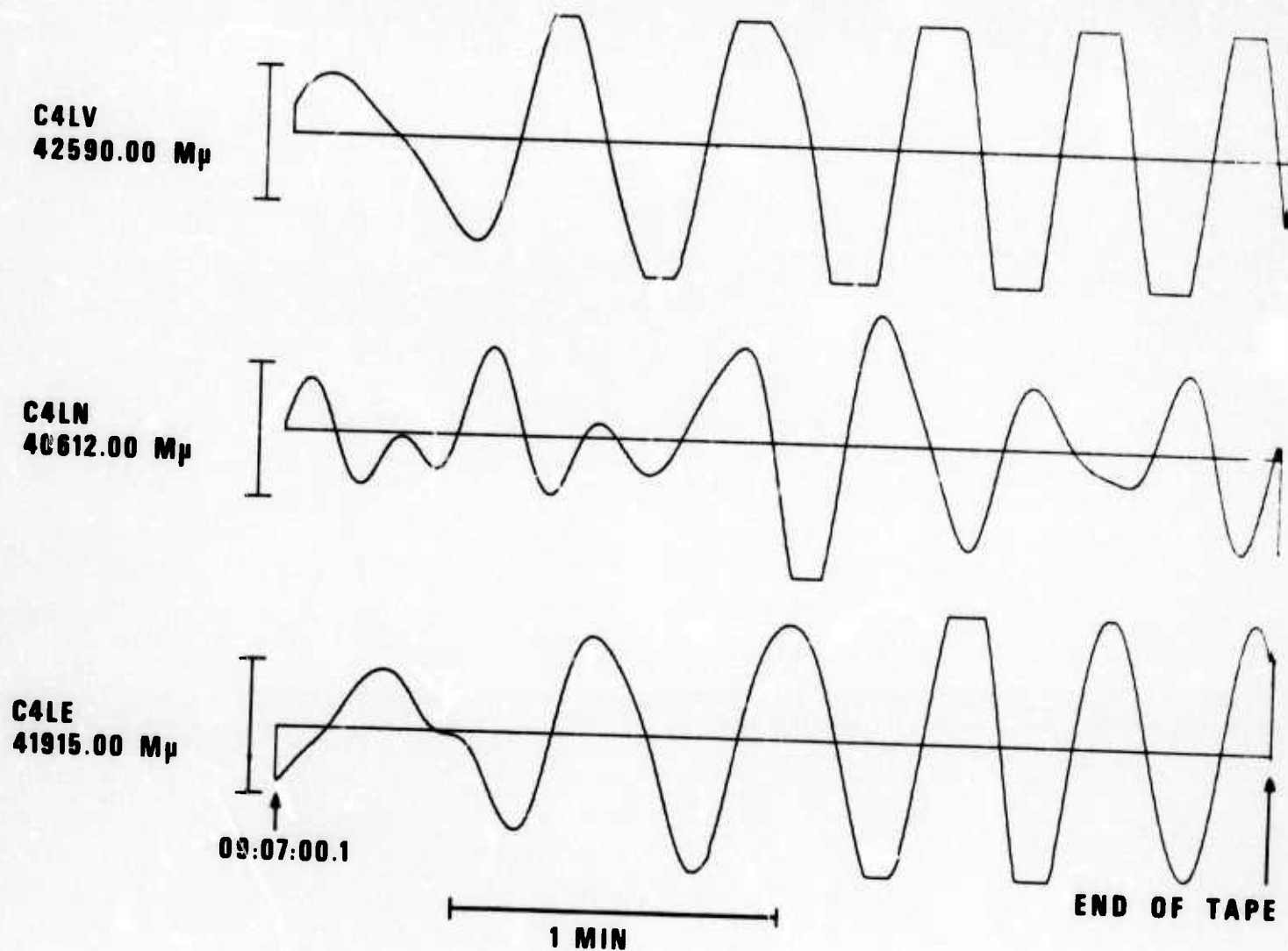


TIME

2 MIN

09:20:00

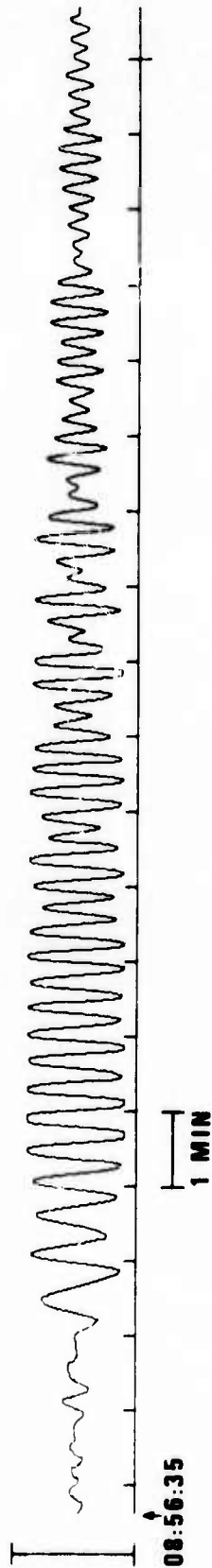
LASA LONG PERIOD C4 SUBARRAY 07 OCT 75



ARRAY LONG PERIOD VERTICAL BEAMS 07 OCT 75

NORSAR

LP VERTICAL
49228.99 MHz



ALPA

LP VERTICAL
19955.26 MHz

